

shape of the cavity occupied by the female, and fig. o. the female taken therefrom, natural size. Fig. s. the gall of the male insect.

The sketch x. shows a gall of *B. murita*.

There are other species of smaller gall-making *Cocci*, in which both male and female excrescences are on the same leaves. The males are of a red colour, some with and some without anal setæ, and the females with very long posterior legs, the anterior and intermediate missing.

I intend to make these insects the subject of my next paper, which will also include another genus of gall-makers, in which the male larvæ undergo their metamorphosis, in the gall of the mother, and where the females lose nearly all traces of articulation, becoming fixed masses of animal matter, without apparent limbs, or sign of vitality.

Further communication on the gall-making Coccidæ,
by H. L. SCHRADER.

[Read July 7th, 1862.]

In my last paper I gave you the result of my observations on the genus which I have named *Brachyscelis*. I now proceed to the description of some insects so remarkable in their form, that I have ranked them as composing distinct Genera.

I propose therefore to divide the gall-making *Coccidæ* as follows:—

1. Genus. *Brachyscelis*. Where the females have six legs complete, but short, and unfit for use.
2. Genus. *Opisthoscelis*. Where they have only two long posterior legs.
3. Genus. *Ascelis*. Where there are no vestiges of legs.

The galls of the insects of the genus *Opisthoscelis* are often

found, male and female, under the same leaf. (Pl. III. l.) The female gall is in the shape of a pea, but somewhat larger, the male gall, very small and conical.

The female *Opisthoscelis subrotunda* (Pl. III. n.) is of a crimson red colour, nearly round, but the terminal segment of the abdomen very much tapered; it has very long posterior legs, but no trace of the anterior and intermediate legs.

Fig. o. A longitudinal section of a full-grown female gall, with the female inside, (natural size.)

The male Pl. III. m. is of a red colour, with anal setæ, the body, legs, and antennæ, are very hirsute; length about two lines.

In another species *O. gracilis*, which I have observed, the oviparous female is rather slender, and the legs are still longer and thinner than in the species before noticed, and the male has no anal setæ.

The larvæ resemble those of *Brachyscelis*, but have very short anal setæ.

In the third genus, which I have named *Ascelis*, the female larvæ alone form galls. Pl. III. Fig. q. and r. show sections of the gall of *A. præmollis* with the full grown female inside. The male larvæ undergo their metamorphoses, in the gall of the mother.

The females, Pl. III. p. (magnified), which are of a pale yellow colour, lose nearly all traces of articulation, becoming fixed masses of animal matter, apparently without life or exterior members. There are only dark spots to be seen, in the places where the feet should be found. But on the back of the animal is situated a horny instrument with three points: Fig. s. This curiously shaped instrument, which always holds some gum between its three points, (as in Fig. t.) seems to serve for closing up the hole or entrance of the gall, to prevent strange insects from entering.

The opening of the gall is not, as with *Brachyscelis*, in the top of the gall, but on the other side of the leaf, as Fig. r. will illustrate.

The larva Pl. III. Fig. u. which is flat and of a transparent yellow, resembles that of *Brachyscelis*, except that it is more

pointed at the apex, has shorter antennæ, shorter anal setæ, and not so much hair fringing the abdomen.

The male larva changes in the abode of the mother, into a second form, Fig. v. ; in this it is red, active, and somewhat longer than in its first metamorphosis, but narrow, and with very short anal setæ. After this it changes to a pupa (Fig. y.) and then into the perfect male insect, (Fig. x.) which is also of a crimson colour.

The galls of *Ascelis* are generally of a large globose form, and also in the shape of large flat swellings on both sides of the leaves ; in either case I found the perfect males, together with the larvæ in different stages, in the month of June. But as I have observed on the same trees galls of all sizes, both young and full-grown, I hold it difficult to fix the time of their transformation.

I observed also very minute specimens of *Ascelis* under the tender bark of young shoots ; some were white, others black, resembling little bags filled with ova. Owing to these attacks the young twigs exhibited a very crippled appearance.
